EFFECTIVENESS OF E-LEARNING MODULES ON CREATIVITY AND ACHIEVEMENT IN COMPUTER SCIENCE OF HIGHER SECONDARY SCHOOL STUDENTS

S. Sri Raseka [1] | Dr. D. Muruganantham [2]

[1] M.Phil Scholar, Department of Education, PRIST University, Thanjavur, India - 613403.

[2] Assistant Professor, Department of Education, PRIST University, Thanjavur, India -613403.

ABSTRACT

The study investigated "Effectiveness of E-Learning modules on creativity and achievement in computer science of Higher Secondary School Students". The objective of the study is to find out the effectiveness of E-Learning among the Higher Secondary School Students.

This study investigates the effectiveness of using E-Learning in teaching in tertiary institutions. In institutions of higher education, the issue of utilizing modern information and communication technologies for teaching and learning is very important. This study reviews literature and gives a scholarly background to the study by reviewing some contributions made by various researchers and institutions on the concept of E-Learning, particularly its usage in teaching and learning in higher educational institutions. It unveils some views that people and institutions have shared globally on the adoption and integration of E-Learning technologies in education through surveys and other observations. This paper tells us about what is E-learning, what is its impact on employee and student performance, what is its history, difference between E-learning and traditional learning, future of E-Learning and some facts about E-Learning that are collected from various websites of Internet are also included in this paper, fact show that it is growing in recent years.

A sample of 40 students from 2 higher secondary schools were selected in Trichy district for this research work using the random sampling techniques. The investigator collected the reviews that are conducted in India and in abroad.

The tool for "Effectiveness of E-Learning" was prepared by the investigator under the two categories "creativity" and "achievement". Each item consists of 25 questions. The research findings show that the level of effectiveness of E-Learning among the Higher Secondary School Students was high when compared with conventional talk and chalk method.

KEYWORDS: Effectiveness, Creativity, Achievement, Technology in Education, E-Learning, Conventional method.

INTRODUCTION:

The destiny of country is decided in classrooms. Quality of education in schools to great extend depends on ability and motivation and involvement of the teachers, infrastructure and effective school administration.

Education and society are related to each other, both are interdependent. Therefore sociologists refer school as a "miniature society". In other words school is a representative of a society. Education is important and useful to every section of the society. Education has come a long way since early days though it encompasses a lot more than what was there to be taught in earlier times, and technology has made it easier for both the teachers and students to learn easily. The advancements in technology are not limited to gadgets and appliances used by people in daily life, it has reached schools and classrooms to ease the way education is imparted and absorbed by students. The Internet has become one of the vital ways to make available resources for research and learning for both teachers and students to share and acquire information (Richard and Haya 2009). Technology-based e-learning encompasses the use of the internet and other important technologies to produce materials for learning, teach learners, and also regulate courses in an organization. E-Learning is essentially the network-enabled transfer of skills and knowledge.

Need of the Study:

In the present digital era, the development in various aspects of computer technology has reached beyond our imagination and expectations. Even though computer has lot of applications in various field, one should not forget its application in the field of education. It is very useful and helpful in teaching and learning process. They have capability of multiplying the human intellect beyond part conceptions and have tremendous implications for education. E-Learning plays a very important role in making education really interesting.

In this 21st century, there is a fast changing in the classroom interaction. Due to internet, a new direction is shown to the education field. Keeping these things in mind, the investigator of the present study would like to frame a study on the effectiveness of E-Learning modules in teaching learning process.

Scope of the Study

The main scope is finding the effectiveness of E-Learning in computer science among higher secondary school students. The investigator hopes that the findings of this will provide certain concrete suggestions to the students about E-Learning. It is also concerned with the quality of education.

Objectives:

1. To find out the significant difference between the mean scores of Experimental group which is exposed to the developed E-Learning modules and control group which is taught through the conventional talk & chalk method for XI standard students in their pre test for creativity in computer science.

2. To find out the significant difference between the mean scores of Experimental group which is exposed to the developed E-learning modules and control group which is taught through the conventional talk & chalk method for XI standard students in their pre test for achievement in computer science.

3. To find out the significant difference between the mean scores of Experimental group which is exposed to the developed E-learning modules and control group which is taught through the conventional talk & chalk method for XI standard students in their post test for creativity in computer science.

4. To find out the significant difference between the mean scores of Experimental group which is exposed to the developed E-learning modules and control group which is taught through the conventional talk & chalk method for XI standard students in their post test for achievement in computer science.

5. To find out signification correlation between the post-test scores in creativity and achievement which are exposed to the developed E-Learning modules.

Hypotheses:

1. There is no significant difference between the mean scores of Experimental group which is exposed to the developed E-Learning modules and control group which is taught through the conventional talk & chalk method for XI standard students in their pre test for creativity in computer science.

2. There is no significant difference between the mean scores of Experimental group which is exposed to the developed E-learning modules and control group which is taught through the conventional talk & chalk method for XI standard students in their pre test for achievement in computer science.

3. There is no significant difference between the mean scores of Experimental group which is exposed to the developed E-learning modules and control group which is taught through the conventional talk & chalk method for XI standard students in their post test for creativity in computer science.

4. There is no significant difference between the mean scores of Experimental group which is exposed to the developed E-learning modules and control

group which is taught through the conventional talk & chalk method for XI standard students in their post test for achievement in computer science.

5. There is no signification correlation between the post-test scores in creativity and achievement which are exposed to the developed E-learning modules.

Sample:
According to GOODE & HAT (1952) "A sample is smaller representation of the larger whole". In the present study 40 higher secondary school students have been selected as sample.

Statistical Techniques Used:
Suitable statistical techniques were used in the interpretation of the data to test various hypotheses such as mean, Pooled Standard deviation, t-values and correlation analysis.

Limitations of the Study:
•   The study is limited to Trichy district only.

•   Limited variables were assumed for this investigation.

•   Sample size confined to 40 higher secondary school students.

RESULT AND DISCUSSION:

Table 1
The mean, S.D, 't' value of Experimental group which is exposed to the developed E-Learning modules and control group which is taught through the conventional talk &chalk method for XI standard students for creativity and achievement in computer science.

Variables	Group	N	Mean	SD	't' Value
Creativity	Pre-test Experimental Group	20	10.15	1.78	0.08*
	Pre-test Control Group	20	9.2	1.64	
	Post-test Experimental Group	20	21.25	1.87	3.82
	Post-test Control Group	20	15.75	1.40	
Achievement	Pre-test Experimental Group	20	10.05	1.90	0.09*
	Pre-test Control Group	20	9.05	1.73	
	Post-test Experimental Group	20	20.9	1.97	3.67
	Post-test Control Group	20	16.2	1.39	

Not significant at 0.05 level.

The Mean, SD, t-values of creativity and achievement were tabulated in table 1. The pre test scores of creativity and achievement are not significant. Hence the null hypotheses framed on these variables are accepted. The post test scores of creativity and achievement are significant. Hence the null hypotheses framed on these variables are not accepted.

Table 2
Relationship between Creativity and Achievement

Variables	N	'r'	p value
Creativity	20	0.418	0.26
Achievement	20		

Significant at 0.05 level

The calculated value of 'r' 0.418 is more than the table value of 'p' 0.26 at 0.05 level of significance. Since the 'r' value is moderate, it is concluded that there is a moderate relationship between the post-test scores in creativity and achievement which are exposed to the developed E-learning modules.

CONCLUSION:
An attempt has been made find out the effectiveness of E-Learning modules on creativity and achievement in computer science of higher secondary school students and it was found to be overall effective than the conventional talk and chalk method.

•   The pre test scores of creativity and achievement are not significant.

•   The post test scores of creativity and achievement are significant.

•   There is a moderate relationship between the post-test scores in creativity and achievement which are exposed to the developed E-learning modules.

REFERENCES:
1. Clancy, M., Stasko, J., Guzdial, M., Fincher, S. & Dale, N. (2001).Models and Areas for CS Education Research. Computer Science Education, 11(4), 323-341. doi:10.1076/csed.11.4.323.3827

2. Clear, T. (2004) Critical Enquiry on CS Education. In Fincher, S., &Petre, M. (Eds) Computer Science Education Research, London, UK: Taylor & Francis, 101-125.

3. Cornwell, L.W.: Crisis in computer science education at the precollege level. In: 13th SIGCSE Technical Symposium on Computer Science Education, SIGCSE Bulletin, vol. 14(1), pp. 28–30. ACM, New York (1982)

4. Deek, F. P. & Kimmel, H. (1999). Status of Computer Science Education in Secondary Schools: One State's Perspective. Computer Science Education, 9(2), 89-113. doi:10.1076/csed.9.2.89.3808

5. DiSessa, A. (2001). Changing minds: Computers, learning, and literacy, The MIT Press.

6. Ebby, C. B. (2000). Learning to Teach Mathematics Differently: The Interaction Between Course work and Fieldwork for Preservice Teachers, Journal of Mathematics Teacher Education, 3, 69-97. ebby_2000.pdf

7. Glass, R. L., Ramesh, V., and Vessey, I. 2004.An analysis of research in computing disciplines.Commun. ACM 47, 6 (Jun. 2004), 89-94. DOI=http://doi.acm.org/10.1145/990680.990686

8. Lapidot, T. and Hazzan, O. (2004). Construction of a professional perception in the "Methods of Teaching Computer Science" course, Inroads, vol.36(2), pp. 57-61. Construction of professional perceptions

9. Meisalo,V., Sutinen, E. &Torvinen, S. (2003) Choosing Appropriate Methods for Evaluating and Improving the Learning Process in Distance Programming Courses. In the proceedings of IEEE Frontiers in Education, Denver, CO, USA.

10. Nwana, H. (1997). The computer science education crisis: fact or illusion? Interacting with Computers, 9(1), 27- 45.

11. Pears, A., Seidman, S., Eney, C., Kinnunen, P., and Malmi, L. 2005.Constructing a core literature for computing education research. SIGCSE Bull. 37, 4 (Dec. 2005), 152-161. DOI= http://doi.acm.org/10.1145/1113847.1113893

12. R. E. Mayer, (1988). Teaching and Learning Computer Programming. Lawrence Erlbaum Associates

13. Robin,A., Rountree, J., &Rountree, N. (2003). Learning and teaching programming: A review and discussion. Computer Science Education, 13(2), 137-172.

14. Tucker, A., Deek, F., Jones, J., McCowan, D., Stephenson, C. and Verno, A. (2002). A Model Curriculum for K-12 Computer Science: Report of the ACM K-12 Education Task Force Computer Science Curriculum Committee

15. Mohd.Sharif khan, 2004, Ashish Publishing house, New Delhi.

16. Mishara R.C. Exploring Education Research 2008 AP .H, New Delhi – P.7.

17. Nagarajan k, Srinivasan R and Mary Vijayakumar (1994), Rsearch Methodology in Education, Ram PublishersChennei.

18. PathakR.p., Methodology of Educational Research 2008. Allantic, new Delhi.

19. Ravi parkash, 2005, fpr commonwealth Publishers New Delhi.

20. Sampath k, Panneerselvam A and Santhanam S (1998), Educational Tecnology, Sterling Publications, New Delhi.

21. SwaroopSaxena N.P.(2005) "Information and Communication Technology in Teacher Education" Bhargava Book House, Agra-282004.

22. Sharma, R.N.(1975) Introductory sociology, Meerut college, Meerut.

23. Aggarwal,J.C.,1995,Teacher and Education in a developing society, Vikas publishing house pvt.ltd.

24. Crow Ritchie Crow, 1961, Education in secondary school, American book company.